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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/076,069 | 02/15/2002 | Roland Jurecic | 39532-176599 | 8513 |

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| EXAMINER | |
|---|---|
| BERTOGLIO, VALARIE E | |
| **ART UNIT** | **PAPER NUMBER** |
| 1632 | |

DATE MAILED: 10/07/2003 12

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/076,069 | JURECIC ET AL. | |
| | Examiner | Art Unit | |
| | Valarie Bertoglio | 1632 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *03 July 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,4,5 and 11-22* is/are pending in the application.

4a) Of the above claim(s) *11-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4 and 5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

## DETAILED ACTION

### *Response to Amendment*

Applicant's amendment filed on 07/03/2003 has been entered. Claims 1,4 and 5 have been amended. Claims 2,3 and 6-10 have been canceled. Claims 1,4,5 and 11-22 are pending and claims 1,4 and 5 are under consideration in the instant action.

### *Election/Restrictions*

Claims 11-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made without traverse in Paper No. 9.

### *Claim Rejections - 35 USC § 112-1st paragraph*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 4 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The previous rejection of claims 1 and 4 is maintained for the reasons of record as set forth on pages 2-3 of the previous office action mailed 04/04/2003.

*Vas-Cath Inc. v. Mahurkar*, 19USPQ2d 1111, clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was

in possession *of the invention.* The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See *Vas-Cath* at page 1116).

Claims, as amended, encompass 1) any isolated nucleic acid that is at least 98% identical to SEQ ID NO:1 or a sequence that is complementary thereto (claim 1) or 2) any isolated nucleic acid that is at least 99% identical to SEQ ID NO:1 or a sequence that is complementary thereto (claim 4). Claims 1 and 4 encompass a huge genera of nucleic acids that can vary in as much as 2% of the sequence of SEQ ID NO:1. The disclosure does not describe any of the nucleotides encompassed by these claims other than SEQ ID NO:1. Other sequences described in the specification include nucleic acids encoding for the human and zebrafish Hepp proteins. These nucleic acids have significantly less than 98% identity to SEQ ID NO:1. There is no evidence on the record of a relationship between the structure of any nucleic acid comprising a sequence at least 98% identical to SEQ ID NO:1 or a sequence that is complementary thereto, and the sequence set forth in SEQ ID NO:1 that would provide reliable information about the structure of any gene within the genus. There is no evidence on the record that the nucleic acids comprising a sequence at least 98% identical to SEQ ID NO:1 or a sequence that is complementary thereto, had a known structural relationship to SEQ ID NO:1.

In the instant case the claimed embodiments of nucleotide sequences encompassed within the claimed genera lack a written description. The specification fails to describe what nucleotide sequences fall into this genus and it was unknown as of applicants' effective filing date that any of these nucleotide sequences would have the property of encoding a a product

with the same function as SEQ ID NO:1. The skilled artisan cannot envision the detailed chemical structure of the encompassed nucleic acid molecules and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The nucleic acid itself is required. See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016.

One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483. In *Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

In view of the above considerations one of skill in the art would not recognize that applicant was in possession of the necessary common features or attributes possessed by any member of the genus of genes encoding any isolated nucleic acid that is at least 98% identical to SEQ ID NO:1 or a sequence that is complementary thereto. Therefore, only the gene set forth by SEQ ID NO:1, but not the full breadth of the claims meet the written description provision of 35 U.S.C. §112, first paragraph. University of California v. Eli Lilly and Co., 43 USPQ2d 1398, 1404, 1405 held that "to fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention".

Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

Applicants' arguments filed 07/03/2003 have been fully considered but are not found persuasive as they relate to claims 1 and 4. Applicants assert that as amended, the scope of claims 1 and 4 now includes only those nucleic acid sequences that are 95% identical to SEQ ID NO:1, or are complementary thereto, or encode an identical polypeptide product. The basis of the rejection set forth in the previous office action and reiterated above applies to all nucleic acids other than that which is 100% identical to SEQ ID NO:1, the complement of SEQ ID NO:1, or a sequence that due to the degeneracy of the genetic code encodes a polypeptide identical to that encoded by SEQ ID NO:1. Claims 1 and 4 encompass nucleic acids that are less than identical to SEQ ID NO:1 that are not its complement and do not encode identical polypeptides. As set forth above and in the previous office action, the specification fails to describe the nucleic acids encompassed by the claimed genera of nucleic acid sequences.

Claims 1 and 4 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an isolated nucleic acid comprising SEQ ID NO:1 and a sequence that due to the degeneracy of the genetic code encodes an protein product identical to that of SEQ ID NO:1, does not reasonably provide enablement for any isolated nucleic acids that are less than 100% identical to SEQ ID NO:1. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The previous enablement rejection of

claims 1 and 4 is maintained for the reasons of record as set forth on pages 3-4 of the previous office action mailed 04/04/2003.

Applicants arguments filed 07/03/2003 have been fully considered and are not found persuasive as they relate to claims 1 and 4. Applicants argue that the claims as amended encompass, inter alia, sequences that due to the degeneracy of the genetic code encode a polypeptide product identical to that encoded by SEQ ID NO:1 (page 4, 1st paragraph). The claims as broadly written encompass more than sequences that due to the degeneracy of the genetic code encode a polypeptide product identical to that encoded by SEQ ID NO:1 and it is these other sequences that are not enabled by the specification.

Claims 1 and 4 encompass any nucleic acid having at least 98% identity to SEQ ID NO:1. The specification fails to describe the function of any nucleic acids with at least 98% but less than 100% identity with SEQ ID NO:1. Claims 1 and 4 encompass a genera of nucleic acids that can vary in as much as 2% of the sequence of SEQ ID NO:1. Alteration could comprise changes including deletions, insertions or base changes interspersed throughout any 2% of the nucleic acid. The function of all of these variants of SEQ ID NO:1 is not known and cannot be predicted.

Furthermore, it is known in the art that even conservative amino acid substitutions can adversely affect proper folding and biological activity if amino acids that are critical for such functions are substituted, and the relationship between the sequence of a polypeptide and its tertiary structure is neither well understood nor predictable (see Ngo, in The Protein Folding Problem and Tertiary Structure Prediction, Merz et al. (eds.), Birkhauser Boston: Boston, MA, pp. 433 and 492-495, 1994). Rudinger (in Peptide Hormones, Parsons (ed.), University Park

Press: Baltimore, MD, pp. 1-7, 1976) discloses that even for peptide hormones, which are much smaller than the instant lipase protein, one cannot predict variant amino acid sequences for a biologically active polypeptide. Rather one must engage in "case to case painstaking experimental study" to determine active variants (see page 7). Consequently, excessive trial and error experimentation would have been required to identify the necessary nucleic acid sequence derivatives encoding a biologically active Hepp protein with an amino acid sequence differing from SEQ ID NO: 1 since the amino acid sequence of such polypeptides could not be predicted. Further, and more importantly even if such structure information was available, the skilled artisan would not be able to test any of the sequence variants because the specification has not provided an assay for determining biological activity of Hepp protein. Thus, the skilled artisan would not know how to test any of the claimed variants for biological activity as required by the claims. Therefore, without undue experimentation, one of skill in the art at the time of filing would not know how to make and use the nucleic acids that are broadly encompassed by the claims.

### *Claim Rejections - 35 USC § 112-2nd paragraph*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The previous rejection of claims 1-4 under 35 U.S.C 112, 2nd paragraph is withdrawn.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1) Claims 1,4 and 5 rejected under 35 U.S.C. 102(b) as being anticipated by Isomura (Genbank Accession AP000070, first published 04/08/1999).

Claims are directed to an isolated nucleic acid that is at least 98% identical to SEQ ID NO:1 or a sequence complementary thereto. The claims can be interpreted to encompass fragments of DNA that are complementary to a portion of the nucleic acid set forth in SEQ ID NO:1.

Isomura (Genbank Accession AP000070) teaches a nucleic acid that is complementary to nucleotides 2058-2082 of SEQ ID NO:1.

Therefore, Isomura teaches all of the limitations of claims 1,4 and 5.

2) In view of applicants' amendments to the claims, the rejection of claims 1-5 under 35 U.S.C. 102 (a) as being anticipated by Yahyawi (Genbank Accession # BF607870) is withdrawn. Claims 2 and 3 have been canceled rendering the rejection moot as it pertains to those claims. Claims 1,4 and 5 have been amended such that they no longer encompass polypeptide fragments that are identical to those encoded by SEQ ID NO:1.

3) Claims 6-10 have been cancelled, rendering the rejection of those claims under 35 U.S.C. 102 (a) as being anticipated by Kargul (Genbank Accession BG069072 or BG082096) or Arakawa (Genbank Accession BB055758) moot.

4) In view of applicants' applicants' amendments to the claims, the rejection of claims 1-5 under 35 U.S.C. 102 (b) as being anticipated by Gallatin (USPN 5,831,028, SEQ ID NO:45) is withdrawn. Claims 2 and 3 have been canceled rendering the rejection moot as it pertains to

those claims. Claims 1,4 and 5 have been amended such that they no longer encompass polypeptide fragments that are identical to those encoded by SEQ ID NO:1.

***Conclusion***

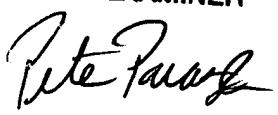
No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Valarie Bertoglio whose telephone number is 703-305-5469. The examiner can normally be reached on Mon-Weds 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Reynolds can be reached on 703-305-4051. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1234.

PETER PARAS
PATENT EXAMINER



Valarie Bertoglio
Examiner
Art Unit 1632